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| 09/973,011      | 10/10/2001  | Laurence Hamid       | IVPH-0069           | 4760             |

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EXAMINER

LAROSE, COLIN M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2624

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/973,011 | <b>Applicant(s)</b><br>HAMID, LAURENCE |  |
|                              | <b>Examiner</b><br>Colin M. LaRose   | <b>Art Unit</b><br>2624                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 and 24 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5,7-11,13-19 and 21-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3,5,7-10,13-19,21-51 and 53-58 is/are allowed.
- 6) ☒ Claim(s) 11 and 52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Arguments and Amendments***

1. Applicant's amendments and arguments filed 12 July 2006 and 24 July 2006, have been entered and made of record.

### ***Response to Amendments and Arguments***

2. Applicant's remarks regarding claims 11 and 52 have been fully considered but are now moot in view of the new grounds of rejection established below on the basis of newly discovered prior art. All other claims have been determined allowable for the reasons recited below.

### ***Double Patenting***

3. Applicant has cancelled claim 6, thereby rendering the previous double patenting rejection thereof moot.

### ***Claim Rejections - 35 USC § 112***

4. In view of Applicant's amendments to claims 1, 11, and 19, the previous rejections thereto under 35 USC § 112, have been withdrawn.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,072,523 by Bolle et al. ("Bolle").

Regarding claim 11, Bolle discloses a method (figure 5) for processing a fingerprint image comprising:

a) acquiring an image of a fingertip of an individual (step 510);

b) processing the acquired image to determine a value indicative of a moisture condition of the fingertip (step 550: a subregion of the image is processed to determine the value of a selected characteristic of the subregion – e.g. a dryness measure or a smudge measure (column 11/47-49) – and the characteristic value can be used to classify the subregion as e.g. "dry, smudgy, or normal" – see column 12/4-16);

c) selecting an image processing process in dependence upon the determined value (step 560: an enhancement filtering operation "w" is selected based on the above-mentioned characteristic value),

the image-processing process involving different image processing steps for different determined values (see e.g. column 9/46-49: "different methods of enhancement processing are needed for different types of poor quality images and different types of poor quality image portions" – that is, different filters will be employed for smudgy subregions vs. dry subregions),

the image processing process for removing a subset of features of the acquired image (i.e. an enhancement filter is applied to a given subregion in order "enhance" it – in other words, to remove the "smudginess" or the "dryness" of the subregion – and for an overall fingerprint image

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that is smudgy or dry, removing the smudginess or dryness from one subregion is equivalent to removing a subset of the smudginess or dryness for the entire image).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7,072,523 by Bolle et al. ("Bolle").

Regarding claim 52, Bolle discloses all of the process steps corresponding to claim 11, as explained above, but it does not appear that Bolle discloses that the disclosed process steps are stored on a "computer-readable medium" and performed by "computer software," as claimed. However, this is not considered a patentable distinction because at the time the invention was made, those skilled in the art would have recognized that Bolle's disclosed method was intended to be performed on a computer, and the use of software to implement computerized image processing methods was a notoriously well-known practice at the time of the invention. Such an implementation would have been an obvious expedient to those skilled in the art. *Official notice taken.*

*Allowable Subject Matter*

9. Independent claims 1, 13, 19, 27, 31, 38, 45, and 53, and all claims dependent therefrom are allowed for the following reasons.

10. Regarding claims 1 and 45, Takahashi (6,845,173) discloses a (computer-implemented) method (figure 2) for fingerprint authentication comprising:

- a) acquiring an image of a fingertip of an individual (S101);
- b) processing the image to determine a value indicative of a moisture condition and applied pressure of the fingertip (S103-104: the image of the fingertip is processed to determine a value indicative of whether the finger was too moist/pressed too hard (yellow light), not moist enough/pressed too lightly (red light), or suitably moist/suitably pressed (green light) – see column 5);
- c) comparing the image to a stored biometric template, the comparison process based on the determined value (S108: the image is compared to a stored template only when the determined value is “green”); and
- d) performing one of an authentication and a rejection in dependence upon the comparison (S108; see also column 4, lines 36-44).

However, Takahashi does not disclose or suggest that the comparison process is selected based on the determined value, and that the comparison process involves different image processing steps for different determined values, in accordance with previously objected claim 2.

11. Regarding claims 31 and 38, Takahashi teaches the corresponding limitations of claim 1 but does not disclose or suggest selecting a biometric template for comparison based on the determined value, and different biometric templates being selected for different determined values.

12. Regarding claims 13, 27, and 53, Yau (6,876,757) discloses a (computer-implemented) method/system (figures 1, 4, and 10) for fingerprint authentication comprising:

- a) acquiring an image of a fingertip of an individual (402);
- b) processing the image to determine a quality value of the fingertip image (406: determines a quality value as either sufficient quality or insufficient quality);
- c) processing the acquired image according to a pre-determined image processing process to remove a subset of features from the acquired image (figure 10: the image is processed to determine whether the finger is living and to remove noise (arcs) from the image at step 1016);
- d) selecting a biometric template in dependence upon the determine value (step 412: only if the value is “sufficient quality” is a biometric template selected from a database for comparison), the biometric template processed according to the predetermined image-processing process (e.g. the biometric templates enrolled in the database via the process of figure 1 have been subjected to the noise-removing process of figure 10 prior to enrollment);
- e) comparing the processed acquired image to the biometric template (414); and

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f) performing one of an authentication and a rejection in dependence upon the comparison (414: the person is either authenticated as recognized or rejected as unrecognized on the basis of the comparison).

However, Yau does not disclose or suggest that (in step c) the predetermined image-processing process involves different image processing steps for different determined values, as claimed. Rather, as shown in figure 10 of Yau, Yau's image processing process (removing arcs 1016) is the same for all determinations that the finger is living (1012). In other words, when the image is processed to remove arcs, the process steps employed to remove arcs are not different for different image quality values.

13. Regarding claim 19, Takahashi discloses a system (figure 1) for fingerprint authentication comprising:

a sensing area (1) for capturing an image of a fingerprint of an individual presented thereto;

a memory storage area (3) for storing captured images therein (i.e. the captured image is necessarily stored somehow within the fingerprint analyzer 3 so that it can be processed); and

a processor (3) for executing code thereon to process the captured image to determine a moisture condition and an applied pressure of the fingertip (S103-104, figure 2), and to compare the captured image to a template image according to an image-processing process selected in dependence upon the determined value (S108, figure 2: the captured image and a template are compared according to a matching process, the matching process being selected for execution in dependence upon the determined value being "green").



However, Takahashi does not disclose or suggest that the image-processing process for comparing the image to a template involves different image processing steps for different determined values, as claimed. Rather, as shown in figure 2 of Takahashi, Takahashi's image comparison process (S108) is the same for all determinations that the image of the finger is of suitable quality. In other words, when the image is processed for comparison, the process steps employed to compare the image to a template are not different on the basis of the image quality values.

### *Conclusion*

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (571) 272-7423. If

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attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu, can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000. Any inquiry of a general nature or relating to the status of this application or proceeding can also be directed to the TC 2600 Customer Service Office whose telephone number is (571) 272-2600.

Colin M. LaRose  
Group Art Unit 2624  
29 September 2006



**VIKKRAM BALI**  
**PRIMARY EXAMINER**